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CANNABIS NEWS AROUND THE WORLD



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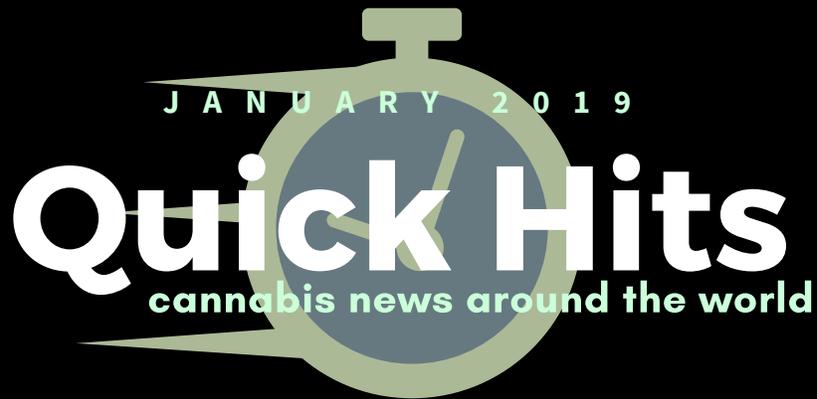
Joe Montana's Big Marijuana Investment Is a Safe Play But Still Significant

Football hero living a second life as a successful investor demonstrates cannabis' profit potential is outweighing any brand damage.



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Why New York's plan to legalize cannabis for adult recreational use is a big deal

New York is the 'most influential market for consumers and [continues] the steady march toward national normalization' of the cannabis industry.

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Cannabis Debt: Poised For Outsized Growth

Given recent weakness in many publicly listed cannabis companies and low levels of leverage, we believe the cannabis debt market will steal the limelight soon.

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AB InBev's CEO unfazed by growing cannabis market

Carlos Brito, the CEO of brewing giant AB InBev, said there's no concrete evidence to suggest that the US' growing cannabis market will hurt beer sales.

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Philippines House approves medical cannabis bill upon final reading

The bill's approval on final reading is not surprising – Speaker Gloria Macapagal Arroyo uses marijuana patches to ease pain when she's in countries where it is legal.

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Canadian minister of pot: Cannabis inventory 'sufficient' to meet demand

Weed companies had stockpiled 109,236 kilograms of cannabis as of the end of December

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The new grey market: As older users warm up to cannabis, pot companies want to learn more

The idea of cannabis as a medicine for chronic health issues and simply not a party drug is becoming more mainstream among the older generation.

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Israel cabinet expected to approve medical cannabis exports

Israel's cabinet is set to approve a long-awaited law to allow exports of medical cannabis, in a move likely to boost state revenues.

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Cannabis firms in M&A hunt look beyond Canada for growth

Canadian medical cannabis companies are increasingly looking internationally for acquisitions to tap growth while consolidation in the country's marijuana sector continues to steam ahead.

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Cigarette Giant Philip Morris Decides Not to Invest in Cannabis

Philip Morris' CEO says he's not "comfortable" with the science behind cannabis and believes more research needs to be done.

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California's Final Cannabis Rules: 8 Things to Know

California crossed a major milestone Jan. 16 with the final approval of the state's permanent commercial cannabis regulations.

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Cannabis Reform Comes To Africa

Lesotho, South Africa, Zimbabwe and Malawi may very well be leading cannabis reform throughout the continent.

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The scent of London has changed: all I can smell now is cannabis

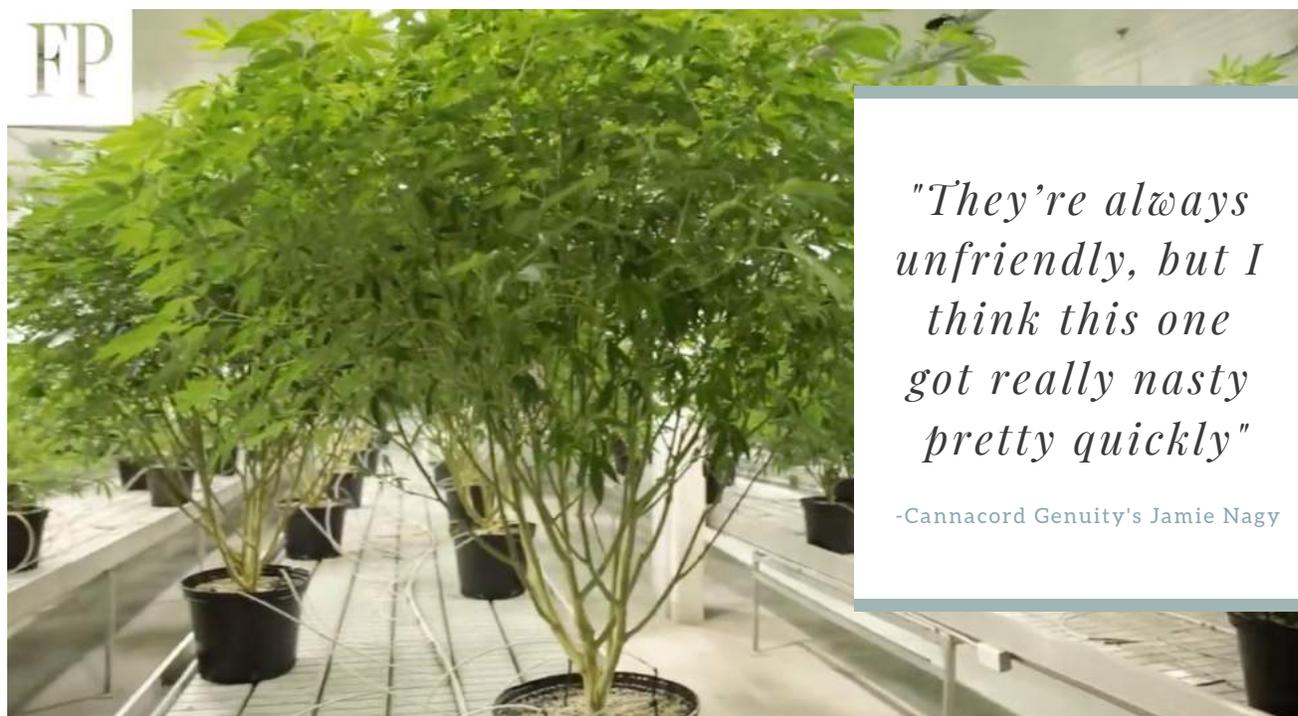
Sprinkled on donuts, mixed into milkshakes or infused into olive oil, make no mistake: Cannabis is coming to a kitchen near you.

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CANNACORD KING OF CANNABIS DEALS, BUT COMPETITION LOOMS

The green rush that has been a financial gold mine for smaller independent investment firms may not last

Repost: Vanmala Subramaniam / Financial Post / January 30, 2018



"They're always unfriendly, but I think this one got really nasty pretty quickly"

-Cannacord Genuity's Jamie Nagy

Canaccord Genuity Corp.'s Jamie Nagy says he now spends "120 per cent" of his time on cannabis deals – that's in sharp contrast to just three years ago, when the co-head of mergers and acquisitions had almost no cannabis files on his table.

"I would still say we got into the sector as a firm reasonably early and we've developed a very deep domain of knowledge on how the cannabis industry operates, which has snowballed the number of deals that come to us," according to Nagy.

That's not an overstatement – in 2018 alone, the Toronto-based investment bank either led or co-lead 47 deals in the cannabis sector, valued at \$2.49 billion, according to the numbers crunched by Financial Post Data.

Second in place was independent investment shop GMP Securities which was involved in 14 deals valued at \$895 million over the course of 2018 – boutique investment dealer Eight Capital Corp. was third, with 16 deals under its belt, worth \$636 million in total.

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Overall, Canadian incorporated cannabis issuers and resulting issuers raised \$6.2 billion on the capital markets in 2018, through 101 deals that ranged from reverse takeovers to initial public offerings and the new issuance of shares, according to Financial Post data.

One of the highest profile transactions Canaccord bankers worked on in 2018 was Aurora Cannabis Inc.'s hostile bid for CanniMed Therapeutics Inc., the Saskatchewan-based licensed medical producer.

"For me, that was one of the most interesting, one of the ones that stood out," said Nagy, whose team was contacted by Aurora to be the company's advisor on the unsolicited bid for CanniMed.

"It started in the end of 2017 and that's when you had this rising tide in terms of valuations (of cannabis companies), which became a big part of the hostile takeover. They're always unfriendly, but I think this one got really nasty pretty quickly."

The bid was successful in March of 2018 – the conversion of CanniMed shares generated \$230 million, making the deal Canaccord's fifth largest of the year. A bulk of Canaccord's cannabis deals took place in the latter half of 2018, and involved major U.S. cannabis holding companies going public on Canadian stock exchanges.

For example, when Curaleaf Holdings Inc. – which operates a chain of dispensaries, cultivation sites and processing sites across the 10 U.S. states where cannabis is legal for recreational use – decided to list itself on the Canadian Securities Exchange, the company enlisted the help of Canaccord and GMP Securities. That deal size alone was \$520 million, split between both investment firms.

"In 2017, we started seeing some U.S. companies like MedMen (Enterprises) and Green Thumb Industries Inc. coming into the Canadian public markets, but it was really in 2018 that we started seeing a huge wave of U.S. cannabis companies listing here," said Graham Saunders, Canaccord's managing director and head of capital markets origination.

Rank	Underwriter	Total number	Total amount (\$M)
1	Canaccord Genuity Corp.	120	3,207
2	TD Securities Inc.	39	3,153
3	Scotia Capital Inc.	20	2,752
4	BMO Capital Markets	42	2,699
5	CIBC World Markets Inc.	36	2,466
6	RBC Capital Markets	32	2,053
7	Credit Suisse Group AG	9	1,801
8	GMP Securities L.P.	29	1,520
9	National Bank Financial Inc.	28	1,382
10	Morgan Stanley & Co. LLC	8	1,182
11	Eight Capital Corp.	23	725
12	Clarus Securities Inc.	20	594
13	Goldman, Sachs & Co.	6	552
14	Barclays Bank PLC	3	545
15	Cormark Securities Inc.	21	472
16	Cowen and Company, LLC	1	300
17	J.P. Morgan Securities LLC	3	278
18	Raymond James & Associates, Inc.	10	256
19	Macquarie Capital Markets Canada Ltd.	3	246
20	Haywood Securities Inc.	56	241
21	Deutsche Bank AG	1	208
22	UBS AG	2	204
23	Desjardins Securities Inc.	4	204
24	PI Financial Corporation	36	170
25	Mackie Research Capital Corporation	24	166
26	Peters & Co. Limited	2	165
27	Cantor Fitzgerald, L.P.	7	154
28	Beacon Securities Limited	8	152
29	Sprott Private Wealth L.P.	9	123
30	Jefferies & Company, Inc.	2	122
31	Bloom Burton Securities Inc.	6	118
32	Stifel, Nicolaus & Company, Inc.	2	114
33	Citigroup Global Markets Inc.	2	108
34	Wells Fargo Securities, LLC	2	108
35	INFOR Financial Inc.	5	96
36	Pareto Securities ASA	1	58
37	Leerink Partners LLC	1	53
38	Paradigm Capital Inc.	3	51
39	Echelon Wealth Partners Inc.	9	46
40	Robert W. Baird & Co. Incorporated	1	44
41	Oppenheimer & Co. Inc.	2	44
42	AltaCorp Capital Inc.	2	42
43	Industrial Alliance Securities Inc.	10	35
44	H.C. Wainwright & Co., LLC	3	32
45	Investec Merchant Bank Limited	1	31
46	Gravitas Securities Inc.	12	29
47	Laurentian Bank Securities Inc.	1	27
48	Acumen Capital Finance Partners Limited	3	26
49	First Republic Capital Corp.	1	22
50	Craig-Hallum Capital Group LLC	1	22
51	Roth Capital Partners, LLC	3	15
52	Tamesis Partners LLP	1	14
53	Leede Jones Gable Inc.	13	14
54	Ladenburg, Thalmann & Co. Inc.	1	12
55	The Benchmark Company, LLC	2	11
56	ThinkEquity LLC	2	11
57	Boustead Securities, LLC	1	10
58	Eventus Capital Corp.	1	8
59	Hartleys Limited	1	6
60	IBK Capital Corp.	1	6
61	Emerging Equities Inc.	2	5
62	Shore Capital Markets Limited	1	5
63	M Partners Inc.	3	4
64	Dominick Inc.	1	4
65	Daniel Stewart & Company plc	1	3
66	Primary Capital Inc.	1	3
67	Red Cloud Klondike Strike Inc.	1	3
68	Maxim Group LLC	1	3
69	KES 7 Capital Inc.	1	2
70	Chippingham Investment International	7	2
71	Integral Wealth Securities Limited	1	2
72	Argonaut Securities Pty Ltd	1	2
73	Arlington Group Asset Management	1	2
74	Richardson GMP Limited	4	2
75	BSM Capital Corporation	1	2
76	Foundation Markets Inc.	1	2
77	JitneyTrade Inc.	1	0
		727	29,347

SOURCE: FINANCIAL POST | DATA

NATIONAL POST

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Three of Canaccord's most lucrative deals of the year, in fact, involved U.S. cannabis companies – Curaleaf, Acreage Holdings Inc. and Harvest One Cannabis Inc. – listing on Canadian stock exchanges.

Saunders says that Canaccord is benefitting from the fact that U.S. banks are not involved in cannabis companies as the plant remains illegal at a U.S. federal level, and because Canada's Big Five banks came into the cannabis fray much later than independent investment firms such as Canaccord and Eight Capital.

"But there's also no question that after 2017, because of how long we've been involved in the sector, we saw that the American rush was going to happen and we were prepared," he added. The green rush that has been a financial gold mine for smaller independent investment firms, however, may not last.

This year, the U.S. Congress is widely expected to pass the Strengthening the Tenth Amendment Through Entrusting States (STATES) Act, a bill that would effectively allow states to legalize cannabis without the threat of federal interference. More importantly, it will open the door for big American banks to begin financing the cannabis sector – a move that threatens to throw a wrench in Canaccord's dominance of cannabis deals.

Bank of America Merrill Lynch and Goldman Sachs have already begun to poke around in marijuana – both were involved in alcohol behemoth Constellation Brands Inc.'s \$4 billion investment in Canopy Growth last August. More recently, Bank of America Merrill Lynch advised B.C.-based Tilray Inc., on a revenue-sharing agreement with retail giant Authentic Brands Group (ABG).

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Saunders sees it playing out twofold: U.S. cannabis companies, he says, will continue being financed by Canadian independent brokers because of U.S. federal laws on cannabis, but Canadian pot companies, he believes, will start being financed by global investment banks such as Goldman Sachs.

“The STATES Act will be the biggest global cannabis event this year, and yes, Canaccord is going to have some real competition, but no, we’re not worried.”

Only two of Canada’s Big Five banks were involved in some fashion in the institutional side of the cannabis sector last year – BMO Capital Markets led or co-led five deals valued at \$615 million, while CIBC World Markets led the \$50-million reverse takeover that created Canopy Rivers Corp. last July, the venture capital arm of Canopy Growth Corp.

“We are very proud to be leading the charge on such an emerging industry,” said John Armstrong, BMO’s deputy head of investment banking, in an interview with the Financial Post. But the bank will likely face competition from other major Canadian players – RBC Capital Markets recently said it would start participating in cannabis deals, advising on stock sales and co-ordinating mergers and takeovers. The bank already has a dedicated cannabis analyst based in Toronto.

BMO also made its first real foray into the cannabis industry last year, when it helped lead an equity financing deal for Canopy Growth last January, valued at approximately \$175 million.

“We have a rigorous process around identifying what businesses our clients are doing. We proceeded cautiously and prudently before getting into this industry,” Armstrong said.

BMO’s head of M&A, Geoff Barsky, claims that BMO’s pipeline of cannabis-related deals for 2019 is already “full”.

“I think the kind of deals in the sector will also evolve and you’ll find more entrants trying to participate in the market through partnerships and joint ventures,” he said.

Barsky also predicts that the pace of deals in the cannabis industry is only going to go up in 2019, given how fragmented the industry is.

“Companies – not just cannabis companies – are going to look for opportunities to grow their businesses,” Barsky said. “And Canadian cannabis is a controlled environment, one that investors are more trusting of, which I think gives us an attractive potential role in the global industry.” 

UC Berkeley Launches a Cannabis Research Center

One of the nation's premier learning institutions is bear-hugging the once-feared cannabis plant like never before.

REPOST: DAVID DOWNS / LEAFLY / JANUARY 30, 2018

BERKELEY, CA — One of the nation's premier learning institutions is bear-hugging the once-feared cannabis plant like never before. A newly formed Cannabis Research Center at UC Berkeley launched Tuesday night. The center could be the beginning of something huge in academia, said co-director Van Butsic, who has a Ph.D in forestry, and is studying cannabis farming and water use in 2019.

Butsic said researchers all across the university are performing or proposing cannabis-related studies. The Cannabis Center hopes to catalyze those elements to boost grant funding and publish major findings in leading journals—the dual fuels of academic success.

Cal's number one rank among among public universities bestows unprecedented credibility on the burgeoning field of cannabis studies. Tuesday night's private reception took place on the top floor of the Barrows science building overlooking the school's famed campanile. A wine and cheese reception followed a panel talk.

The panel discussion included: Richard Parrott of farming regulator CalCannabis; Joanna Cedar from major producer CannaCraft; Patricia Brooks, cannabis advisor to Alameda County Supervisor Nate Miley; longtime advocate Kristin Nevedal of the Nevedal Group; and Stephen DeAngelo, founder of Oakland's biggest retailer Harborside.

“This really opens things up. We really should be so much further ahead in our ability to gather data, analyze it, and get it out there.”

- Dominic Corva, Ph.D, founder, executive director, Center for the Study of Cannabis and Social Policy

In the audience were more than 50 guests including cannabis research all-stars Amanda Reiman, who has a doctorate in social welfare; Dominic Corva from the Center for the Study of Cannabis and Social Policy in Washington state; and Cal post-doctoral fellow Michael Polson.

This first year, the Cal Cannabis Center maps the barriers to entry for cannabis farmers and determines farm water use. Many more grant applications should follow.

“It's great the UC system is coming along with this stuff,” Corva said. “This really opens things up. We really should be so much further ahead in our ability to gather data, analyze it, and get it out there. This will get us over the hump.”

A New Epoch In Academia

A small grant from the UC Berkeley Social Science Matrix pays for this year's Cannabis Center. Butsic said that's a world of difference from even a few years ago, when he asked about applying for cannabis research grant money.

"They said, 'Don't even bother to apply.' And now, how things have changed," he said. One in five Americans lives in an adult-use legalization state. The US cannabis economy might total \$40 billion in illicit and licit annual sales.

Until recently, institutional bias against cannabis plagued academia, which mostly relies on federal funding. The vast majority of cannabis research funding comes from the National Institutes of Health (NIH), signed off by the National Institute on Drug Abuse (NIDA). NIDA has a congressional mandate to seek evidence only of cannabis' harms, not its benefits.

Reiman gave the example of the National Survey on Drug Use and Health (NSDUH), which prevented respondents from supporting legalization. The NSDUH survey asked a cannabis legalization question where the answers were either, "strongly oppose," "oppose," or "neutral."

This type of obvious bias "pushed away so many brilliant people," said Reiman, who got her Ph.D. from Cal in 2006. "You lose really smart people or you jade them. We all knew the way the game was being played."

Today, legal cannabis taxes fund unbiased research grants in multiple states — including UC San Diego's work on medical marijuana, as well as traffic safety. Plant biology and ecology researchers can also tap new grants from more traditional sources, such as the National Science Foundation. Northern Michigan University now offers a "Medical Plant Chemistry" degree for cannabis. Plant biology and ecology researchers can also tap new grants from more traditional sources, such as the National Science Foundation. Northern Michigan University now offers a "Medical Plant Chemistry" degree for cannabis.

Alameda County's Patricia Brooks said solid data on cannabis' environmental or economic impact will buttress future policy discussions. "We need to have clean data so we have a baseline of credibility moving forward." Nevedal represents small outdoor farmers and said she was amazed to see Cal level up its cannabis research game. "This is kind of a dream," she said.

Cannabis Research Starts At The Farm

Butsic's focus on cannabis farmers' barriers to entering the legal market is especially timely. Parrott, the lead state regulator at CalCannabis, which oversees growers, noted cannabis is the only agricultural crop subject to state licensing. "You don't need a license to farm tomatoes, you just plant them."

As a result of state licensing, cannabis farms are subject to tough environmental standards under the state's environmental quality act (CEQA) that no other farms face. NIMBYs have long abused CEQA as a cudgel to kill local development in California. That reality has now come to cannabis.

Both cities and the state of California will face NIMBY lawsuits over cannabis that invoke CEQA this year, it seems. CEQA reviews are the number one thing slowing down annual farm licensing in California, Parrott said. These kinds of regulatory hurdles are "devastating to this community," said DeAngelo, who has seen his 3,000-grower supplier roster shrink to 25 distributors in 2018.

The launch of Cal's Cannabis Research Center follows a very popular Science of Cannabis public symposium in 2018 produced by the school's Botanical Garden. 

LAB TESTING REVEALS THERE'S LEAD IN MOST VAPE CARTRIDGES

Repost: A.J. Herrington / High Times / January 29, 2018

With new lab testing requirements for cannabis products that went into effect in California at the beginning of this year, licensed manufacturers have new hurdles to clear to bring safe and compliant merchandise to market in 2019. And many industry insiders are concerned about the addition of analytic testing for heavy metals, a new requirement included in the Phase-3 testing implemented by the state's Bureau of Cannabis Control.

Jacqueline McGowan, the director of local licensing and business development at Sacramento lobbying firm K Street Consulting, told High Times that many in the business expected the new standards could be a challenge.

"We knew this was going to be an issue back in July of last year when we saw phase-2 testing standards go into effect and how that affected the marketplace," says McGowan.

Of the more than fifty licensed cannabis testing labs in California, only a fraction are ready to perform the new tests, which also include screening for mycotoxins—poisons created by molds and fungi.

McGowan says that one her clients, Rebecca Kirk of CWG Botanicals in Oakland, was concerned about the possibility of vape cartridges not passing the new tests.

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Although her company, a cannabis cultivator, manufacturer, and distributor, had not yet produced any cannabis oil cartridges, she was in the process of product development. After obtaining eight different samples of cartridges, she sent them to a laboratory for independent analysis.

“What we do know, is that just about every cartridge out there has lead in it,” says McGowan. McGowan said that it is difficult to find empty vape carts that are produced domestically. “They all come from China,” she says. “There are a few that say that they are manufactured in the U.S., but in reality, they’re assembled in the U.S. The parts are still from China.”

McGowan adds that there are no BCC requirements ensuring that the hardware used for cannabis products be tested for safety.

“We’re going above and beyond the regulations in this project because we’re seeing failures for oil we know is clean,” said McGowan.

Josh Myers, the director of sales at the cannabis ancillary products supplier the Calico Group, said that “it’s absolutely true” that some vape cartridges on the market are contaminated with lead.

He said that the Chinese manufacturers are “already well aware of this. Most of the manufacturers have already got on board, but there’s still a tremendous amount of product ... that still has lead in it.” Myers added that some California cannabis companies are having empty cartridges independently analyzed and are finding that about 5 percent are testing positive for lead.

Greg Magdoff is the CEO of cannabis testing company PharmLabs, which will begin Phase-3 testing for heavy metals at its lab in the Coachella Valley early next month.

He also confirms that he’s heard from manufacturers whose vape cartridges have failed heavy metal tests even though the oil had passed before it was put inside.

Magdoff says that companies should know that cannabis can be contaminated from the material it is contained in, including inks or paints used on wrappers and containers.

“It’s really important that people understand that these heavy metals can leach out from packaging, cartridges, etc. into the product,” Magdoff tells High Times. He also cautions manufacturers eager to cut costs to closely consider their responsibility to consumers.

“If they decide to get a good deal and they’re getting hundreds of thousands of carts overseas, they have to do their due diligence, take one of the empty carts to a local lab and get a metals test— digest it down and see what’s in there,” says Magdoff.

Kirk tells High Times that some fellow manufacturers have shown her cartridge test results that have passed the new standards for heavy metals. But those tests were conducted on the oil inside, not the cartridge itself. Kirk says that terpenes are acidic and could be causing lead to leach from the cartridge into the cannabis oil.

“We’ve got to find something that gives us assurance that six or nine months down the line we’ve still got a clean product,” said Kirk. “We’re looking at a potentially great deal of liability.”

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The danger is real. A Johns Hopkins University study released last year found that lead and other toxic metals had been detected in the vapors produced by some e-cigarette devices.

Rich Able, a medical device marketing consultant, told Forbes that “the metals detected in this study have been associated with multiple adverse health effects under chronic conditions of exposure.

Neurotoxins such as lead are linked to increased risk of cardiovascular and kidney disease. The other metals listed are even more nefarious to human organs.”

Able called for government regulation of e-cigarette devices to help ensure their safety.

“It is critical for manufacturers of these delivery systems to design, engineer and manufacture these devices to FDA medical device quality standards,” he says.

“To continue manufacturing and marketing these devices to the smoking population without further diligence and clinical review is unethical and unconscionable.”

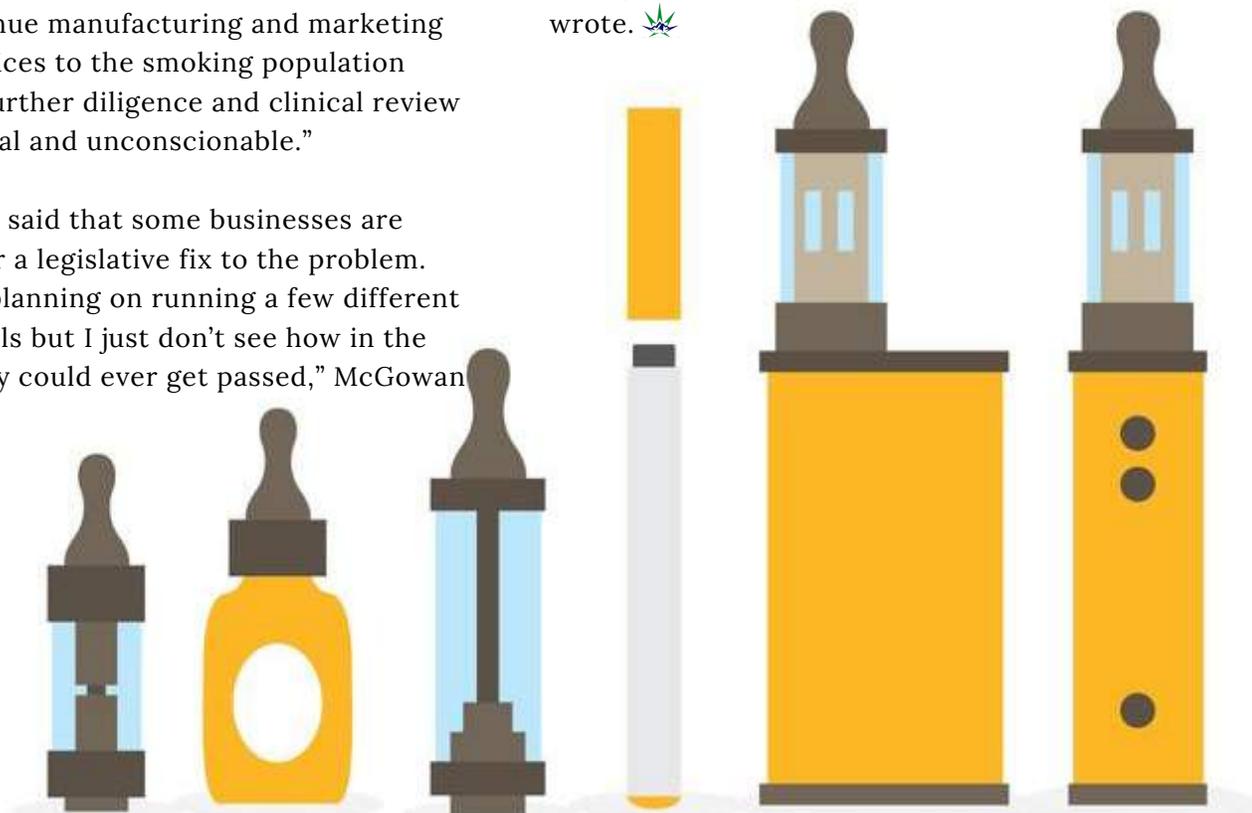
McGowan said that some businesses are hoping for a legislative fix to the problem. “They’re planning on running a few different testing bills but I just don’t see how in the world they could ever get passed,” McGowan says.

“They want to do bulk testing instead of final form testing, but that still means that we will have lead in our cartridges. I’m a consumer. I don’t want to smoke lead. And I don’t want our industry to suffer the consequences of negative headlines.”

In a memo to clients titled “Upcoming Extinction Events” that was published on social media, McGowan and K Street colleague Maximillian Mikalonis warn that sourcing safe vape carts will be a priority for manufacturers in 2019.

“Once cartridges manufactured prior to December 31, 2018, sell out, manufacturers will face difficulty in sourcing hardware for vaporizer cartridges that can pass Phase-3 heavy metals testing.

This will have a negative impact on manufacturer sales and the retailers that run out of cartridges for consumers. If only the illicit market has access to cartridges, expect a rough ride for legal cannabis sales,” they wrote. 🌿





Robert Roscow Jr, director of genetic research, right, works with plant tissue cultures and clones in the Industrial Hemp Propagation Lab at Ebbu, on April 18, 2018 in Evergreen, Colorado. Ebbu, an Evergreen-based company, develops cannabinoid formulations tailored for specific effects and specific consumer products goods. The company shed its marijuana licenses with the state to become a marijuana technology licensing and research company that serves a global marketplace.
Helen H. Richardson/The Denver Post/Getty Images

Future Weed:

FORMULATIONS, PATENTS AND WHERE CANNABIS IS GOING NEXT

As cannabis users embrace concentrates, companies are isolating chemicals to make reliable products – and it's making weed products intellectual property.

Madison Margolin / Rolling Stone / January 20, 2019

When you think of weed, you likely think of a sticky bud, an oil, maybe even a tincture. But what if you reconfigured your notion of cannabis to instead envision an abstract scientific equation? Sure, this may sound like the stuff of stoner sci-fi, except that it's the real-life direction that the cannabis industry is headed.

That's because the future of weed is in formulations. So while there will always be a need for skilled cultivators to grow the plant, consumers — especially novice consumers — more and more will veer toward a manufactured cannabis oil, edibles, pills, or tinctures, designed by scientists to target the consumer's specific needs.

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The basis of these products are specially curated chemical concoctions, donning specific ratios of cannabinoids (like THC and CBD) and terpenes, aromatic compounds that provide a distinct character to each of marijuana's varied psychoactive effects.

As adult-use and medical-marijuana policies become more commonplace, the canna-curious demographic is growing. Whether these naive consumers are interested in cannabis for its therapeutic or recreational benefits, many are not up for the gamble of smoking flower to see what happens.

Rather, the new cannabis consumer is looking for an exact, consistent experience to reliably target either a particular medical ailment, or to bring about a specific, desired effect. And it turns out, these consistent, tailored experiences, as well as the technology used to procure them, comprise a company's intellectual property — which can be transferred, legally, anywhere in the country.

After all, we're not talking about actual weed here, just its abstract scientific expression and methodology.

Some companies are turning that into a growing business. Innovative research and development companies with clinical labs are experimenting with plant genetics and chromatography, using a process of trial and error to see how different cannabinoids and terpenes uniquely interact with the human body.

Ebbu and LucidMood, for example, both out of Colorado, are working on ways to customize the user experience, even to customize the cannabis plant itself, in order to emphasize a particular set of compounds.

"You can get something along the lines of a designer high," says Tristan Watkins, chief science officer of LucidMood, which curates cannabinoid and terpene ratios to foster different moods for a line of vape pens ("party," "bliss," "relax," "focus," and "sleep" just to name a few).

"We wanted to build additional formulations to help highlight or amplify the positive effect that people were looking for out of cannabis, while also mitigating the antithesis [of that effect]," he says.

Manipulating the ratios of these compounds will be what brings cannabis to the mainstream, he says.

"With this formulated cannabis you have a lot more control over how you feel and maintaining consistency in the product, regardless of what state it was created in." And that curated cannabis product will be the same six months later, or whenever you next try it.

"It removes a lot of concern and perceived risk for the consumer," Watkins adds.

To draft a formulation, scientists must first deconstruct the cannabis plant down to its individual compounds. Then, they can study the effects of those compounds, in isolation.

To understand, for instance, the extent to which the terpene linalool causes drowsiness, scientists would first look at how a particular ratio of THC and CBD alone impacts energy, and then what happens when a certain amount of linalool is added to that ratio.

"We build up a step-by-step process until we find that our formulation was efficacious," Watkins explains.

While THC and CBD are the most well-known cannabinoids, the cannabis plant contains dozens of active compounds — meaning that lesser known cannabinoids like CBN or CNG, for instance, as well as various terpenes, have yet to grab the spotlight. However, by isolating these compounds, scientists can better understand how they work and how to use them in context. “There’s no way to make a true mainstream [product] unless you can deliver on the concept of trust,” says Jon Cooper, founder and former CEO of Ebbu, now vice president of business development for Canopy, which acquired Ebbu for \$4 million in October.

“When we looked at this plant, we quickly started realizing that this thing is chemical chaos.”

That’s what led Cooper and his colleagues to break down the cannabis plant and put those isolated compounds back together into specific combinations for a consistent experience.

Founded in 2013, Ebbu built a discovery lab for cannabinoids. There, scientists started to grow live human receptors to understand, in real time, how they would interact with those compound isolates.

However, beyond constructing novel cannabinoid/terpene combinations, Ebbu has gone one step further to “genetically edit” the plant so that it produces greater or lesser volumes of specific compounds. In doing so, scientists can create larger amounts of those compounds in a way that makes them commercially viable, Cooper explains. (Genetic editing, he points out, is different from genetic modification in that the latter introduces DNA, chromosomes, or some other foreign entity, such as a pesticide, into the plant, while the former works with the material that’s already, inherently there.)

“That’s something we can replicate worldwide,” he says. “The goal here was twofold: How do we create the best, most enjoyable recreational products, but how do we utilize these cannabinoids to create the most efficacious medicine that I truly believe has the opportunity for changing the lives for hundreds of millions of people?”

But moreover, he says, this form of cannabis medicine has the added bonus of not feeling like actual medication. “Wouldn’t it be great if they could drink a tea, versus popping a pill?” Cooper says.

“In the next ten years, smokeable flower form will be less than 10 percent of what’s consumed in the marketplace — people won’t think of [cannabis] as a stoner thing anymore.”

What’s more, by conceiving of cannabis via scientific equations or as novel (read: edited) plant varieties, companies can license their IP anywhere in the world — legally.

Those executing cannabis R&D have the option to retain their IP as trade secret, or to partner with a cultivation company in any state in order to share their own proprietary cannabinoid/terpene ratios or technology — like that behind Ebbu’s genetic editing technique — to co-create weed-based, designer products.

“Under patent law, there’s no prohibition on patenting cannabis related technology,” says Alison Malsbury, a San Francisco-based intellectual property attorney with cannabis law firm Harris Bricken.

“For that reason, there’s no problem with patenting formulations of cannabis compounds so long as they meet other requirements for patentability.”

To get a patent, the invention must be novel, as well as non-obvious, and cannot already exist in nature. A wild strain of cannabis, for instance, could not be patented because the genetics weren't manipulated or human-bred. But for proprietary blends or genetic editing technology, the incentive to patent would be to gain a limited monopoly (which lasts only a couple decades), so that the party seeking the patent is the only one who can make or sell the product, or license other people to do so.

"The thing that operators need to be aware of is if they transfer ownership of the patented technology to another company, how that company made use of that technology would be dictated by state law," says Malsbury.

"You can patent cannabis-related technology all day long and not violate federal law, but where federal law comes into play is where you are actually using that patented technology."

In California, only license-holders can participate (and collaborate with other license-holders) in the state's regulated system. Another thing to beware of are patent trolls, she adds, companies that buy up patented technology in a variety of industries, but never use that technology — rather, they just use their patent rights to prevent other people from using that technology and to extort licensing fees.

Even so, these artificial preparations of cannabis compounds are different, namely because whoever made the artifice is likely the sole party to come up with that specific combination.

"Formulations are going to be one of the best routes to actually obtaining patent protection and that's what's appealing to pharmaceutical companies," Malsbury says.

"As we see them starting to take interest in cannabis, I think formulations will be one of the means by which they stake their claims in the market."

There's also something called a method patent, which makes proprietary the way something is made (assuming it's a new method).

"We're seeing more people patenting the strains and formulations, as well as the methods of making these formulations," says IP attorney John Mansfield, owner of Portland, Oregon's Mansfield Law. With plenty of controversy around patent infringement lawsuits, Mansfield asks "whether we should be patenting cannabis at all."

While the option of patenting sellable technology beckons pharmaceutical companies into the cannabis industry, it may also offer protections to more boutique companies perfecting their plant varieties or crafting new products.

At the same time, this technology can help cannabis brands appeal to the masses — from cannabis connoisseurs to newbies. It's hard to fathom anyone would mind having a clearer idea of what to expect from their weed.

"With formulated cannabis products, you can get specific effects and all that but you can also tightly control how strong the high is, as well," says Watkins.

"By creating products that are mild in their dosing and the high they deliver, new users have a bit of a stepping stone and training wheels in the initial cannabis experience."

And for veteran stoners, all the more power to them to experiment with and understand these new cannabis highs. 



Joe Montana's Big Marijuana Investment Is a Safe Play But Still Significant

Repost: [Chris Roberts / Cannabis Now / January 30, 2019](#)

PHOTO TORBAKHOPPER

The name “Joe Montana” still carries enormous cachet around the San Francisco Bay Area. It also carries serious investment potential, deal flow now being tapped by the cannabis industry.

Joe Montana the man might have been able to cash in on the goodwill he earned while quarterbacking the San Francisco 49ers to four Super Bowl titles in the 1980s, but the pro football hall of famer has proven to be more than a nostalgia act good for branding restaurants.

He has become a model for how to turn game checks into serious multi-generational wealth.

Montana has invested in real estate and software and is also a partner in Liquid 2 Ventures, an early-stage seed fund of the type sought after by startups.

This all makes the 62-year-old's recent, very large, and very direct entry into the marijuana industry unsurprising while also paradigm-shifting.

Last week, it was announced that Montana and a group of partners have invested \$75 million into Caliva, a San Jose-based state-licensed retail and cultivation operation (which also happens to be one of the closest dispensaries, geographically speaking, to the 49ers' new stadium in Santa Clara).

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The exact size of Montana's personal stake wasn't announced, and there are many other prominent investors in the group — Carol Bartz, a former CEO of Yahoo! Inc. among them — but what makes this interesting is Montana's apparent positioning as an owner rather than a mere brander or pitchman. Though he is also doing that. In the statement accompanying the big news of his big buy, Montana said that he hoped investments like his could "provide relief to many people" and perhaps be a bulwark against "opioid use or addiction."

Whether Montana uses cannabis himself as former football players including running back Ricky Williams, lineman Kyle Turley, or quarterback Jake Plummer have publicly disclosed — in Turley's case, he credits cannabis for literally saving his life from a prescription painkiller and head trauma-fueled tailspin — is unknown. Montana has yet to say. It may not really matter.

Montana's money, or his magnetism attracting more money, or merely his brand as a successful investor (or a combination of all three) will help Caliva open new stores and launch new product lines, Bartz told the Associated Press. This is a marked escalation from Montana's previous marijuana-related investment, a modest-by-comparison \$4.1 million play in Herb, a cannabis-themed media company.

You could argue that Montana isn't really breaking any new ground. Investing in a California licensed cannabis company more than a year after retail stores began selling to any customers 21 and over isn't exactly novel and is even less so given the broader national context, where legacy alcohol and tobacco companies are openly pouring literal billions into cannabis companies.

Even less interesting is Montana's deployment of the medical marijuana argument in the recreational marijuana era. Sure, there is research saying that cannabis may reduce dependence on opiates and legalization may cut down on overdose deaths, and it's good that someone rich and famous is saying these things, but they're also old news. And who among us really thinks Montana is in it for the healing as opposed to the return on investment? At the same time, money is conservative, and attitudes around cannabis are still retrograde. Montana's willingness to attach his name to cannabis is a demonstration that there really is very little serious stigma left with the cannabis industry, at least for a football hero with a successful second act as a money man. 🌿



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